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RESULTS OF THE SEPTEMBER 2-3, 2015 AIR EMISSION COMPLIANCE TESTING AT THE LOUISIANA PACIFIC SIDING PLANT IN NEWBERRY, MICHIGAN

Submitted to:

LOUISIANA-PACIFIC CORPORATION
7299 North C.R.403
Newberry, Michigan 49868

Attention:

Matthew Hieshetter
Plant Environmental Manager

Reviewed by:

Kathleen Eickstadt
Coordinator

Report Number 15-34574
September 30, 2015
KE/kce

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

RENEWABLE OPERATING PERMIT REPORT CERTIFICATION

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating Permit (ROP) program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Environmental Quality, Air Quality Division upon request.

Source Name: Louisiana-Pacific | County: Luce

Source Address: 7299 N County Road 403 | City: Newberry

AQD Source ID (SRN): N0780 | ROP No.: MI-ROP-N0780-2011 | ROP Section No.: NA

Please check the appropriate box(es):

☐ **Annual Compliance Certification (Pursuant to Rule 213(4)(c))**

Reporting period (provide inclusive dates): From _____ To _____

☐ 1. During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the ROP.

☐ 2. During the entire reporting period this source was in compliance with all terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference, **EXCEPT** for the deviations identified on the enclosed deviation report(s). The method used to determine compliance for each term and condition is the method specified in the ROP, unless otherwise indicated and described on the enclosed deviation report(s).

☐ **Semi-Annual (or More Frequent) Report Certification (Pursuant to Rule 213(3)(c))**

Reporting period (provide inclusive dates): From _____ To _____

☐ 1. During the entire reporting period, **ALL** monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred.

☐ 2. During the entire reporting period, all monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred, **EXCEPT** for the deviations identified on the enclosed deviation report(s).

☒ **Other Report Certification**

Reporting period (provide inclusive dates): From _____ To _____

Additional monitoring reports or other applicable documents required by the ROP are attached as described:

September 2nd and 3rd compliance stack testing EUPRESS

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report and the supporting enclosures are true, accurate and complete

Kurt Chamberlain	Plant Manager	906-293-3265
Name of Responsible Official (print or type)	Title	Phone Number
K Chamberlain		16 Oct 15
Signature of Responsible Official		Date

* Photocopy this form as needed.

EQP 5736 (Rev 11-04)

1 INTRODUCTION

On September 2-3, 2015, Interpoll Laboratories personnel conducted Air Emission tests at the Louisiana Pacific Corporation (LP) OSB Plant Located in Newberry, Michigan on the following sources:

Source	Methods
Press Vents	MDI, Formaldehyde, Methanol

On-site testing was performed by Chris Warneke, Jimmy Kingsbury, Scott Fjelsta and Andrew Strong. Coordination between testing activities and plant operation was provided by Matt Hieshetter of LP. The tests were witnessed by Joel Asher and Tom Gasloli, both members of the Michigan Department of Environmental Quality.

MDI concentrations were determined in accordance with OTM-14. One field blank train was performed.. This method employs collection of MDI with 1,2-PP in toluene reagent, with analysis by HPLC.

Both formaldehyde and methanol were sampled using EPA Method 320 (FTIR). The on-line gas analysis was performed using an MKS MultiGas 2030 FTIR based analyzer that has a fixed gas cell path length of 5.11 meters and a detector that requires to be cooled by the use of liquid nitrogen. The number of scans was increased so that an average reading was recorded every 30 seconds instead of the standard 60 seconds. This was done in order to better capture the emissions at each sample point (24 in total, see flow determination for sample points). The gas was transported to the FTIR analyzer through a heat traced Teflon line originating from the manifold system described above. Three one-hour runs were conducted to show compliance. Prior to and following sampling the system was leak-checked and found to be acceptable. The Method 320 Data is contained in Appendix E. For the QA portion of EPA Method 320, the calibration transfer standard procedure was performed using a gas cylinder containing propane. For the dynamic spike requirement, this was performed according to the guidelines spelled out in EPA Method 320 and utilized a compressed gas cylinder with certified quantities of acetaldehyde (HAP) and sulfur hexafluoride. This data can be found in appendix F.

2 SUMMARY AND DISCUSSION

The results of the compliance tests are summarized in the following tables. An overview of all results is presented below:

PARAMETER		LIMIT[1]	MEASURED
CONDITION 1			
EAST PRESS VENT			
MDI			
.....	(LB/HR)	0.53	0.029
Formaldehyde			
.....	(LB/HR)	3.1	0.79
Methanol			
.....	(LB/HR)	N/A	0.64
WEST PRESS VENT			
MDI			
.....	(LB/HR)	0.53	0.044
Formaldehyde			
.....	(LB/HR)	3.1	0.77
Methanol			
.....	(LB/HR)	N/A	0.52
CONDITION 2			
EAST PRESS VENT			
MDI			
.....	(LB/HR)	0.53	0.035
Formaldehyde			
.....	(LB/HR)	3.1	0.73
Methanol			
.....	(LB/HR)	N/A	0.64
WEST PRESS VENT			
MDI			
.....	(LB/HR)	0.53	0.031
Formaldehyde			
.....	(LB/HR)	3.1	0.67
Methanol			
.....	(LB/HR)	N/A	0.49

[1] Combined limits for both No.1 and No.2 Press Vents.

PARAMETER		LIMIT[2]	MEASURED
CONDITION 3			
EAST PRESS VENT			
MDI			
.....	(LB/HR)	0.53	0.031
Formaldehyde			
.....	(LB/HR)	3.1	0.60
Methanol			
.....	(LB/HR)	N/A	0.58
WEST PRESS VENT			
MDI			
.....	(LB/HR)	0.53	0.040
Formaldehyde			
.....	(LB/HR)	3.1	0.49
Methanol			
.....	(LB/HR)	N/A	0.50

Due to the configuration of each of the press vents and the test port locations, it was determined that the best approach for sampling both sources was to sample at a total of twenty-four (24) points. The same sample points and dwell times (2.5 minutes) were used for all sampling systems being used. At the completion of Test 3-Run 3 (West Press Vent) for MDI, it was found that the leak rate check through the sampling system (0.05 cfm) exceeded the maximum allowable leak rate of 0.02 cfm. This was discussed onsite and it was decided to proceed without having to repeat the sample run. No other difficulties were encountered in the field or in the laboratory evaluation of the samples. On the basis of these facts and a complete review of the data and results, it is our opinion that the concentrations and emission rates reported herein are accurate and closely reflect the actual values which existed at the time the tests were performed.

[2] Combined limits for both No.1 and No.2 Press Vents.

Test 1 Summary of the September 2, 2015 MDI Emission Compliance Test on the East Press Stack at the LP facility located in Newberry, Michigan.

Item		Run 1	Run 2	Run 3	Average
Date of test		09-02-15	09-02-15	09-02-15	
Time runs were done	(Hrs)	0800 / 0904	1000 / 1102	1145 / 1247	
Volumetric Flow					
Actual	(ACFM)	87,903	91,420	87,786	89,036
Standard	(DSCFM)	79,294	81,912	78,315	79,840
Gas Temperature	(°F)	78	82	83	81
Moisture Content	(%v/v)	0.94	1.34	1.78	1.35
Gas Composition	(%v/v, dry)				
Carbon Dioxide		0.03	0.03	0.03	0.03
Oxygen		20.90	20.90	20.90	20.90
Nitrogen		79.07	79.07	79.07	79.07
Isokinetic Variation	(%)	99.3	100.2	100.3	99.9
MDI Results					
Sample Volume	(DSCF)	34.70	36.18	34.60	35.16
Total Micrograms in Sample	(ug)	81.0	95.9	110.0	95.6
Concentration	(gr/dscf)	0.0000360	0.0000409	0.0000490	0.0000420
Concentration	(ppm,d)	0.00792	0.00900	0.01079	0.00924
Emission Rate	(LB/HR)	0.0245	0.0287	0.03293	0.0287
Emission Rate	(g/sec)	0.003084	0.003618	0.004149	0.003617

Test 2 Summary of the Results of the September 2, 2015, Method 320 (HAP's) Emission Test on the East Press Vent at the LP facility located in Newberry, Michigan.

Item			Run 1	Run 2	Run 3	Average
Date of test			09-02-15	09-02-15	09-02-15	
Time runs were done		(Hrs)	0800 / 0904	1000 / 1102	1145 / 1247	
Volumetric Flow						
	Actual	(ACFM)	87,903	91,420	87,786	89,036
	Standard	(DSCFM)	79,294	81,912	78,315	79,840
Gas Temperature		(°F)	78	82	83	81
Gas Composition		(%v/v, dry)				
	Carbon Dioxide		0.03	0.03	0.03	0.03
	Oxygen		20.90	20.90	20.90	20.90
	Nitrogen		79.07	79.07	79.07	79.07
Formaldehyde						
	Concentration	(ppm, d)	2.03	2.22	2.01	2.09
	Emission Rate	(LB /HR)	0.76	0.86	0.74	0.79
Methanol						
	Concentration	(ppm, d)	1.74	1.56	1.54	1.61
	Emission Rate	(LB /HR)	0.69	0.64	0.60	0.64

Test 3 Summary of the September 2, 2015, MDI Emission Compliance Test on the West Press Vent Stack at the LP facility located in Newberry, Michigan.

Item		Run 1	Run 2	Run 3	Average
Date of test		09-02-15	09-02-15	09-02-15	
Time runs were done	(Hrs)	0800 / 0906	1000 / 1104	1145 / 1247	
Volumetric Flow					
Actual	(ACFM)	104,389	104,090	100,244	102,907
Standard	(DSCFM)	93,988	92,928	89,117	92,011
Gas Temperature	(°F)	84	86	86	85
Moisture Content	(%v/v)	1.85	1.97	1.94	1.92
Gas Composition	(%v/v, dry)				
Carbon Dioxide		0.03	0.03	0.03	0.03
Oxygen		20.90	20.90	20.90	20.90
Nitrogen		79.07	79.07	79.07	79.07
Isokinetic Variation	(%)	99.1	99.9	99.7	99.6
MDI Results					
Sample Volume	(DSCF)	40.01	39.88	38.18	39.35
Total Micrograms in Sample	(ug)	172.0	126.7	124.5	141.1
Concentration	(gr/dscf)	0.0000663	0.0000490	0.0000503	0.0000552
Concentration	(ppm,d)	0.01459	0.01078	0.01107	0.01215
Emission Rate	(LB/HR)	0.0534	0.0390	0.03843	0.0436
Emission Rate	(g/sec)	0.006733	0.004919	0.004842	0.005498

Test 4 Summary of the Results of the September 2, 2015, Method 320 (HAP's) Emission Test on the West Press Vent at the LP facility located in Newberry, Michigan.

Item			Run 1	Run 2	Run 3	Average
Date of test			09-02-15	09-02-15	09-02-15	
Time runs were done		(Hrs)	0800 / 0900	1000 / 1100	1145 / 1247	
Volumetric Flow						
	Actual	(ACFM)	104,389	104,090	100,244	102,908
	Standard	(DSCFM)	93,988	92,928	89,117	92,011
Gas Temperature		(°F)	84	86	86	85
Gas Composition		(%v/v, dry)				
	Carbon Dioxide		0.03	0.03	0.03	0.03
	Oxygen		20.90	20.90	20.90	20.90
	Nitrogen		79.07	79.07	79.07	79.07
Formaldehyde						
	Concentration	(ppm, d)	1.82	1.76	1.75	1.78
	Emission Rate	(LB /HR)	0.81	0.77	0.74	0.77
Methanol						
	Concentration	(ppm, d)	1.24	1.05	1.10	1.13
	Emission Rate	(LB /HR)	0.58	0.49	0.49	0.52

Test 5 Summary of the September 2, 2015 MDI Emission Compliance Test on the East Press Stack at the LP facility Located in Newberry, MI.

Item		Run 1	Run 2	Run 3	Average
Date of test		09-02-15	09-02-15	09-02-15	
Time runs were done	(Hrs)	1325 / 1428	1515 / 1616	1650 / 1752	
Volumetric Flow					
Actual	(ACFM)	85,118	88,124	83,143	85,462
Standard	(DSCFM)	76,232	78,327	74,677	76,412
Gas Temperature	(°F)	84	84	84	84
Moisture Content	(%v/v)	1.21	1.13	0.82	1.05
Gas Composition	(%v/v, dry)				
Carbon Dioxide		0.03	0.03	0.03	0.03
Oxygen		20.90	20.90	20.90	20.90
Nitrogen		79.07	79.07	79.07	79.07
Isokinetic Variation	(%)	100.1	99.9	99.9	100.0
MDI Results					
Sample Volume	(DSCF)	33.62	37.07	35.35	35.35
Total Micrograms in Sample	(ug)	89.7	132.0	151.0	124.2
Concentration	(gr/dscf)	0.0000412	0.0000549	0.0000659	0.0000540
Concentration	(ppm,d)	0.00906	0.01208	0.01450	0.01188
Emission Rate	(LB/HR)	0.0269	0.0369	0.04218	0.0353
Emission Rate	(g/sec)	0.003389	0.004647	0.005314	0.004450

Test 6 Summary of the Results of the September 2, 2015, Method 320 (HAP's) Emission Test on the East Press Vent at the LP facility located in Newberry, Michigan.

Item			Run 1	Run 2	Run 3	Average
Date of test			09-02-15	09-02-15	09-02-15	
Time runs were done		(Hrs)	1325 / 1428	1515 / 1616	1650 / 1752	
Volumetric Flow						
	Actual	(ACFM)	85,118	88,124	83,143	85,462
	Standard	(DSCFM)	76,232	78,327	74,677	76,412
Gas Temperature		(°F)	84	84	84	84
Gas Composition		(%v/v, dry)				
	Carbon Dioxide		0.03	0.03	0.03	0.03
	Oxygen		20.90	20.90	20.90	20.90
	Nitrogen		79.07	79.07	79.07	79.07
Formaldehyde						
	Concentration	(ppm, d)	2.05	2.09	1.91	2.02
	Emission Rate	(LB /HR)	0.74	0.77	0.67	0.73
Methanol						
	Concentration	(ppm, d)	1.95	1.57	1.51	1.68
	Emission Rate	(LB /HR)	0.74	0.61	0.56	0.64

Test 7 Summary of the September 2, 2015, MDI Emission Compliance Test on the West Press Vent Stack at the LP facility located in Newberry, Michigan.

Item		Run 1	Run 2	Run 3	Average
Date of test		09-02-15	09-02-15	09-02-15	
Time runs were done	(Hrs)	1325 / 1428	1315 / 1616	1650 / 1752	
Volumetric Flow					
Actual	(ACFM)	99,039	100,524	100,975	100,179
Standard	(DSCFM)	87,797	89,810	88,654	88,754
Gas Temperature	(°F)	87	86	86	86
Moisture Content	(%v/v)	1.60	1.21	0.86	1.23
Gas Composition	(%v/v, dry)				
Carbon Dioxide		0.03	0.03	0.03	0.03
Oxygen		20.90	20.90	20.90	20.90
Nitrogen		79.07	79.07	79.07	79.07
Isokinetic Variation	(%)	99.7	99.6	99.6	99.6
MDI Results					
Sample Volume	(DSCF)	37.60	38.44	37.92	37.99
Total Micrograms in Sample	(ug)	102.6	90.9	105.4	99.6
Concentration	(gr/dscf)	0.0000421	0.0000365	0.0000429	0.0000405
Concentration	(ppm,d)	0.00926	0.00803	0.00943	0.00891
Emission Rate	(LB/HR)	0.0317	0.0281	0.03258	0.0308
Emission Rate	(g/sec)	0.003992	0.003539	0.004106	0.003879

Test 8 Summary of the Results of the September 2, 2015, Method 320 (HAP's) Emission Test on the West Press Vent at the LP facility located in Newberry, Michigan.

Item			Run 1	Run 2	Run 3	Average
Date of test			09-02-15	09-02-15	09-02-15	
Time runs were done		(Hrs)	1325 / 1428	1515 / 1616	1650 / 1752	
Volumetric Flow						
	Actual	(ACFM)	99,039	100,524	100,975	100,179
	Standard	(DSCFM)	87,797	87,810	88,654	88,087
Gas Temperature		(°F)	87	86	86	86
Moisture Content		(%v/v)	2.80	2.71	2.56	2.69
Gas Composition		(%v/v, dry)				
	Carbon Dioxide		0.03	0.03	0.03	0.03
	Oxygen		20.90	20.90	20.90	20.90
	Nitrogen		79.07	79.07	79.07	79.07
Formaldehyde						
	Concentration	(ppm, d)	1.38	1.64	1.79	1.60
	Emission Rate	(LB /HR)	0.57	0.68	0.75	0.67
Methanol						
	Concentration	(ppm, d)	1.16	1.05	1.12	1.11
	Emission Rate	(LB /HR)	0.51	0.46	0.49	0.49

Test 9 Summary of the September 3, 2015 MDI Emission Compliance Test on the East Press Stack at the LP facility located in Newberry, Michigan.

Item		Run 1	Run 2	Run 3	Average
Date of test		09-03-15	09-03-15	09-03-15	
Time runs were done	(Hrs)	0750 / 0851	0925 / 1026	1105 / 1206	
Volumetric Flow					
Actual	(ACFM)	89,375	83,158	83,549	85,361
Standard	(DSCFM)	81,226	75,131	75,170	77,176
Gas Temperature	(^{o}F)	75	79	81	78
Moisture Content	(%v/v)	0.98	1.07	0.87	0.97
Gas Composition	(%v/v, dry)				
Carbon Dioxide		0.03	0.03	0.03	0.03
Oxygen		20.90	20.90	20.90	20.90
Nitrogen		79.07	79.07	79.07	79.07
Isokinetic Variation	(%)	99.7	100.4	99.9	100.0
MDI Results					
Sample Volume	(DSCF)	38.39	35.77	35.58	36.58
Total Micrograms in Sample	(ug)	129.8	96.4	106.8	111.0
Concentration	(gr/dscf)	0.0000522	0.0000416	0.0000463	0.0000467
Concentration	(ppm,d)	0.01147	0.00915	0.01019	0.01027
Emission Rate	(LB/HR)	0.0363	0.0268	0.02984	0.0310
Emission Rate	(g/sec)	0.004576	0.003374	0.003760	0.003903

Test 10 Summary of the Results of the September 3, 2015, Method 320 (HAP's) Emission Test on the East Press Vent at the LP facility located in Newberry, Michigan.

Item			Run 1	Run 2	Run 3	Average
Date of test			09-03-15	09-03-15	09-03-15	
Time runs were done		(Hrs)	0750 / 0851	0925 / 1026	1105 / 1206	
Volumetric Flow						
	Actual	(ACFM)	89,375	83,158	83,549	85,361
	Standard	(DSCFM)	81,226	75,131	75,170	77,176
Gas Temperature		(°F)	75	79	81	78
Gas Composition		(%v/v, dry)				
	Carbon Dioxide		0.03	0.03	0.03	0.03
	Oxygen		20.90	20.90	20.90	20.90
	Nitrogen		79.07	79.07	79.07	79.07
Formaldehyde						
	Concentration	(ppm, d)	1.82	1.62	1.50	1.64
	Emission Rate	(LB /HR)	0.70	0.57	0.53	0.60
Methanol						
	Concentration	(ppm, d)	1.53	1.49	1.50	1.51
	Emission Rate	(LB /HR)	0.62	0.56	0.56	0.58

Test 11 Summary of the September 3, 2015, MDI Emission Compliance Test on the West Press Vent Stack at the LP facility in Newberry, Michigan.

Item		Run 1	Run 2	Run 3	Average
Date of test		09-03-15	09-03-15	09-03-15	
Time runs were done	(Hrs)	0750 / 0852	0925 / 1026	1105 / 1206	
Volumetric Flow					
Actual	(ACFM)	101,717	98,335	100,046	100,033
Standard	(DSCFM)	90,427	88,078	88,731	89,079
Gas Temperature	(^{o}F)	76	79	85	80
Moisture Content	(%v/v)	1.67	0.63	1.57	1.29
Gas Composition	(%v/v, dry)				
Carbon Dioxide		0.03	0.03	0.03	0.03
Oxygen		20.90	20.90	20.90	20.90
Nitrogen		79.07	79.07	79.07	79.07
Isokinetic Variation	(%)	99.9	98.9	100.6	99.8
MDI Results					
Sample Volume	(DSCF)	38.81	37.44	38.37	38.21
Total Micrograms in Sample	(ug)	137.6	157.3	96.5	130.5
Concentration	(gr/dscf)	0.0000547	0.0000648	0.0000388	0.0000528
Concentration	(ppm,d)	0.01203	0.01426	0.00854	0.01161
Emission Rate	(LB/HR)	0.0424	0.0489	0.02951	0.0403
Emission Rate	(g/sec)	0.005342	0.006166	0.003718	0.005075

Test 12 Summary of the Results of the September 3, 2015, Method 320 (HAP's) Emission Test on the West Press Vent at the LP facility located in Newberry, Michigan.

Item			Run 1	Run 2	Run 3	Average
Date of test			09-03-15	09-03-15	09-03-15	
Time runs were done		(Hrs)	0750 / 0852	0925 / 1026	1108 / 1208	
Volumetric Flow						
	Actual	(ACFM)	101,717	98,335	100,046	100,033
	Standard	(DSCFM)	90,427	88,078	88,731	89,079
Gas Temperature		(°F)	76	79	85	80
Moisture Content		(%v/v)	2.17	2.30	2.27	2.25
Gas Composition		(%v/v, dry)				
	Carbon Dioxide		0.03	0.03	0.03	0.03
	Oxygen		20.90	20.90	20.90	20.90
	Nitrogen		79.07	79.07	79.07	79.07
Formaldehyde						
	Concentration	(ppm, d)	1.24	1.15	1.11	1.17
	Emission Rate	(LB /HR)	0.53	0.48	0.46	0.49
Methanol						
	Concentration	(ppm, d)	1.12	1.11	1.14	1.12
	Emission Rate	(LB /HR)	0.50	0.49	0.50	0.50